



Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61010

February 27, 1990

LTR: BYRON 90-0214
FILE: 2.7.611

Dr. Thomas E. Murley, Director
Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Dr. Murley:

Pursuant to requirements to report on an annual basis, as stated in 10 CFR 50.59, Byron Station (license #NPF-37 and NPF-66) is submitting the enclosed report. This report consists of item descriptions and their respective Safety Evaluation. Included also as part of this report, are changes made to features of the fire protection program, not previously approved by the commission.

Sincerely,

R. Pleniewicz

R. Pleniewicz
Station Manager
Byron Nuclear Power Station

RP/PV/bf (2457M/0248M)

Enclosures

cc: P. C. Shemanski, NRR Project Manager
Regional Administrator NRC, Region III
NRC Resident Inspector, Byron
M. C. Parker, IDNS
CECo Distribution List

9003150257 891231
PDR ADOCK 05000454
R PDC

IE47

1/c

BYRON NUCLEAR POWER STATION
ANNUAL 10 CFR 50.59 REPORT
1989
COMMONWEALTH EDISON COMPANY
NRC DOCKET NO. 50-454 AND 50-455
LICENSE NO. NPF-37 AND NPF-66

MODIFICATION M6-1-84-056

DESCRIPTION

This modification reroutes the service air header above the Boric Acid Batch tank to eliminate a personnel hazard. The original header was too low and could be bumped by the operator.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because this modification does not involve any additions or deletions to the system as described in the FSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the function of the service air system is not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-84-247

DESCRIPTION

This modification provides a Chemical Feed system, including acid and caustic metering pumps, for maintaining the proper pH of the contents in the spent resin tank and in the concentrates holding tank.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because this system is used to maintain the pH in the Spent Resin tank and Concentrates Holding tank which reduces the probability of equipment malfunction at the drumming station.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the added components do not affect the function or operation of the radwaste system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-84-295

DESCRIPTION

This modification provides for the replacement of three 42 inch hydraulic butterfly valves (OWS287A, B, and C) with manual stop-check valves. These valves are located on the non-essential service water pumps discharge lines in the circulation water pump house. The system design requires pump isolation to allow pump switching. The butterfly valves could not be made leaktight and resulted in windmilling of the non-running pump.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the non-essential service water system operation will not be changed. Remote control of the discharge isolation valve is not a design requirement. Prevention of backflow through the idle pump is provided by the manual stop-check valves.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the operability of the non-essential service water system is not changed by this modification.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-85-330

DESCRIPTION

This modification relocates the rod-out line and isolation valve from the Spent Resin Storage tank room to the valve aisle in the Auxiliary Building. This will reduce personnel exposure when the Spent Resin Storage tank drain line requires cleaning out.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the operation and function of the Spent Resin Storage tank is not changed.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because relocating the rod-out line and isolation valve on the Spent Resin Storage tank does not change any analysis regarding the Spent Resin Storage tank or associated systems.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the function of the Liquid Radwaste system is not changed.

MODIFICATION M6-1-85-453

DESCRIPTION

This modification revises the Gland Steam Supply Pressure control system. The original valve and control system was not capable of maintaining the supply pressure as required by the design criteria.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because no components important to safety in the Gland Steam and Main Feedwater systems have been changed.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the operation and function of the Gland Steam and Main Feedwater systems has not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-2-85-626

DESCRIPTION

This modification adds check valves in the inlet and outlet of the unit 2 instrument air receiver. This prevents backflow from the receiver to the dryer or in the event of a malfunction in one of the instrument air components (eg. relief valves, purge valves, etc.), prevents the other receivers from bleeding down to the malfunctioning unit. The effected air receiver can then be manually isolated.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the operation of the instrument air receivers is not effected by the addition of check valves and their ability to continue to operate in the event of a malfunction is increased since the instrument air receiver will not bleed down if one of the other receivers malfunctions.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the operation of the instrument air system is not changed by the installation of inlet and outlet check valves on the instrument receivers.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-85-692 AND M6-0-86-023

DESCRIPTION

These modifications replaced the original spent fuel storage racks with high density racks. The new racks include neutron poison inserts required to maintain Technical Specification limits.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the PSAR is not increased by this modification based on the following considerations:

Accidents previously evaluated for radiological consequences are (1) a spent fuel assembly drop onto the spent fuel pit floor and (2) a spent fuel cask drop. Abnormal conditions which have been previously evaluated with respect to potential for criticality are (1) a dropped fuel assembly laying across the top of a fuel rack and (2) a fuel assembly in transport accidentally dropped into a position parallel with stored fuel in the most reactive corner of the racks. The effect of a seismic event was also evaluated with respect to potential for criticality. All of these events could occur independent of the design and installed configuration of the spent fuel racks. As a result, the probability of these events occurring is not affected by replacement of the spent fuel racks.

The consequences of the previously evaluated events have been evaluated considering the new spent fuel racks. This review has concluded that the criticality acceptance criterion of maintaining the neutron multiplication factor (keff) less than or equal to 0.95 will not be exceeded for these events.

The radiological consequences of the previously considered events were evaluated to determine the impact on offsite and onsite doses previously determined. The increase in the storage capacity of the spent fuel pool

will not significantly alter the operating characteristics of the current spent fuel pool or result in a measurable change in impact on the environment. The design basis fuel handling accidents, described in FSAR Section 15.7.4, were reviewed for possible effects on radiological dose consequences. The review determined that the conclusions in the FSAR will remain valid and that offsite radiological dose consequences will remain within 10 CFR 100 limits. As a result, the consequences of previously evaluated events will not significantly increase as a result of replacing the spent fuel racks.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the new spent fuel racks only allow closer spacing of the fuel assemblies. No new or different kind of accidents result from this.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because there are no Technical Specification basis associated with the this modification.

Analysis shows that a small increase in the spent fuel pool heat load is expected due to the storage capacity expansion. However, the spent fuel cooling system design can handle the increased heat load and maintain the temperature peaks of the pool below design values.

Installation of the new spent fuel racks will also result in a small increase in the pool reactivity as measured by the neutron multiplication factor (Keff). However, the maximum neutron multiplication factor will be maintained less than or equal to 0.95.

MODIFICATION M6-0-86-020

DESCRIPTION

This modification reroutes vent lines from the HRSS (high radiation sample system) to the waste gas compressor. The rerouted lines eliminate loop seals that were created by low points in the existing vent piping.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the operation of the HRSS is in accordance with the design criteria and no systems or components important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the modification ensures proper venting of the HRSS.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-86-025

DESCRIPTION

This modification provides 2 non-safety related pipe supports for the RWST recirculation heating system relief valve (1SI077) drain line.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the addition of non-safety related pipe supports to an existing drain line will not effect any assumptions included in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the addition of pipe supports to the non-safety related drain line does not effect the function of the drain line.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-046

DESCRIPTION

This modification adds isolok samplers to the waste liquor storage tanks and the scrubber pre-concentrator. This will reduce the exposure to personnel taking samples and reduce the probability of a spill at the sample stations.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because no components important to safety have been modified and the function of the Volume Reduction system remains the same.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the function of the volume reduction system has not been modified.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-052

DESCRIPTION

This modification replaces the existing temperature control valves of the service building chiller oil coolers with manually operated valves. The original temperature control valves were not able to maintain oil temperature. The manual control valves installed per a station Temporary Alteration were found to provide acceptable temperature control.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because no components important to safety have been modified and the function of the service building chiller oil coolers has not changed.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the service building chiller interlocks and the system operation have not been changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-094

DESCRIPTION

This modification removed radwaste alarms from the Main Control Room which were redundant with alarms at the Radwaste Control Panel. Since the Radwaste Control Panel is continuously manned and these alarms provide information which is relevant only to the operator of the Radwaste Control Panel, the presence of these alarms in the control room constitutes extraneous information for the control room operators and increases the frequency of nuisance alarms.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the deleted alarms were redundant and no components important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because operation of equipment or components will not be affected.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-116

DESCRIPTION

This modification replaces Boric Acid system level transmitters OLT-315A and B with sealed bellows transmitters to prevent inaccurate level indications due to flashing in the original transmitters' reference leg.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the new transmitters will eliminate control problems caused by the current system design.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the function of the level control process instrumentation is not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-122

DESCRIPTION

This modification provides both sodium hypochlorite and sodium bromide injections to the Chemical Feed System. Each injection subsystem has two 100 percent capacity pumping trains and its own chemical supply tank and uses the existing injection points to the non-essential service water, essential service water and circulating water systems.

This modification replaces the undependable and inaccurate residual chlorine analyzers with a programmable controller capable of timed injections predetermined by laboratory water sample analyses. Also, by providing higher pH and ammonia conditions, hypobromite will more effectively control biological fouling and prevent exceeding NPDES permit limits.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because this modification does not alter the designed functions of the chemical feed system. The system is installed in the Turbine Building and thus does not directly affect other safety-related systems.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the modification does not alter the designed function of the chemical feed system as described in FSAR sections 9.2.1.2.5 and 10.4.5, and no components important to safety have been modified.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-86-180

DESCRIPTION

This modification added 2 redundant level transmitters to indicate reactor coolant system and refueling cavity level during periods when the reactor coolant system is drained. Level indication and an alarm are provided in the main control room to assist the plant operator to minimizing the possibility of air binding the RHR pumps, to fill the refueling cavity and to maintain Technical Specification limits.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the level indication and alarm will assist the plant operator to monitor reactor coolant system and refueling cavity level.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the installation of a flow restrictor in the sensing line to the transmitters forms a class boundary and limits any pipe breaks to conditions already analyzed in the FSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced. Control room indication of reactor coolant system and refueling cavity level will minimized the potential for air binding the RHR pumps or exceeding Technical Specification limit will increase the margin of safety.

MODIFICATION M6-2-86-185

DESCRIPTION

This modification completed the installation of RG 1.47, Bypassed and Inoperable Status Indication monitoring circuits at Byron. Additions to the Equipment Status Display allow monitoring the availability of the Emergency Diesel Generators, status of the Auxiliary Feed suction valves connected to the alternate Essential Service Water sump, normally closed position and alarm for the beginning of an opening stroke for valves SI8804B and RH8735 (return isolation valve for pumping out the refueling cavity and the suction to RHR cold leg recirculation) and level monitoring for the refueling water storage tank, condensate storage tank and boric acid tank.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the installation of this modification will not change the design basis accidents or single failure criteria as described in the FSAR for the effected systems.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the safety-related portion of the modification that adds 4 relays to the auxiliary feedwater switch-over to essential service water suction valves is bounded by the design basis which can sustain any one single failure, or loss of a single train and maintain a continuous supply of auxiliary feedwater for secondary heat removal.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this modification does not effect the basis of any Technical Specification.

MODIFICATION M6-0-86-195

DESCRIPTION

This modification provided Demineralized Water (WM) to the Turbine Generator Stator Cooling Water (GC) skid to improve the water quality and to improve the auto make-up capability of the system by increasing the water pressure during system operation.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because no components important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because a failure of the new makeup line will not degrade the hydrogen related operation of the Turbine Generator Stator Cooling Water skid.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this modification does not effect the basis of any Technical Specification.

MODIFICATION M6-0-86-202

DESCRIPTION

This modification adds a motor driven delumper upstream of surge hopper OVR51M in the Volume Reduction (VR) system. The delumper is used to reduce the size of the solid particles discharged from the Gas/Solid Separator into the surge hopper. This prevents clogging of the surge hopper which causes shutdown of the VR system. A tie-in line to the Instrument Air (IA) system is provided to supply the air seals located in the delumper housing and prevent leakage of radioactive material. This tie-in includes a check valve, a pressure regulating valve and a solenoid valve which is interlocked with the control circuit for delumper OVR87M. A "zero-speed" switch is also included as a protective measure to monitor the speed of the delumper internal blades. In the event the blades' stop due to a mechanical failure or an internal jam, the switch and its interlocks will trip the delumper motor, activate an alarm at the Volume Reduction Panel and close the Fluidized Bed Dryer to conveyor inlet valve to prevent additional radioactive salts from being conveyed to the jammed delumper where they would accumulate and create a hot spot.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because no components important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because all operating parameters for the VR system will remain the same.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-213

DESCRIPTION

This modification installed a pipe between the low conductivity sump pump discharge and the high conductivity sump, replacing a flexible fire hose connection.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the conductivity sumps (high and low) used to collect effluent from the regeneration of resin beds in the demineralizer system are not included in the FSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the design basis and function of the system remain unchanged.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-226

DESCRIPTION

This modification provides two portable air conditioning units, OVV85S and OVV86S, for cooling the Security Control Computer enclosure. These additional air conditioning units will be used as backup to the primary cooling unit, OVC19S, in the event this unit is inoperable.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the backup air conditioning units will prevent complete shutdown of the security computer in the event the primary unit malfunctions or requires maintenance.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the backup air conditioning units only enhance the capabilities of the existing air conditioning system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-86-242

DESCRIPTION

This modification removes the direct connection between the instrument air system and the process sampling system. Instead of using instrument air to blow down the HRSS (high radiation sampling system) accumulator, the installation of an instrument air operated pump to pump the contents of the accumulator to the HRSS waste drain tank will prevent primary water from getting into the instrument air system via the HRSS accumulator and waste drain tank. This leakage had previously caused a release of noble gases in the auxiliary building.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because this modification decreases the chance of contaminating the instrument air system. The process sampling system does not provide any functions important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the potential for contaminating the instrument air system and releasing noble gases into the auxiliary building is reduced.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-86-282

DESCRIPTION

This modification provides a nitrogen purge to the Waste Gas (GW) system release and relief lines to eliminate false high radiation spikes during releases. The residual gas in the waste gas release line (OBW03B) and relief line (OBW05A) caused high background radiation levels in the release radiation monitor (OPR02J), resulting in false high radiation spikes during subsequent releases and automatic termination of the release.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the nitrogen purge of the release and relief lines will reduce residual radioactive activity following a waste gas release.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because this modification does not effect the release or monitoring of releases by the Waste Gas system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the nitrogen purge is monitored the same as a normal gaseous release and follows the same guidelines and requirements for release rate and activity.

MODIFICATION M6-2-87-059

DESCRIPTION

This modification revises the minimum flow and temperature purge permissive interlocks for Feedwater Isolation valves 2FW009A, B, C and D. This allows the valves to be opened manually, as necessary, for the prevention of water hammer. Also provided, are new low flow alarms and separate control panel windows on panel 2PM04J for steam generator loop high/low flow alarms.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because no safety function is affected by the incorporation of water hammer prevention measures into plant operating procedures.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because automatic isolation is removed. Water hammer protection is provided by the remaining temperature permissives and administrative procedures.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the safety function of the Feedwater Isolation valves is not changed.

MODIFICATION M6-2-87-097

DESCRIPTION

This modification revises the physical configuration of the rotational stops for valves 2SX2073A, 2SX2085, 2SX2088A/B, 2SX2158A/B/C/D, 2SX2164A/B and 2SX2166A. These valves are ball type valves which were placed in a throttled position during flow balance activities for the Essential Service Water (SX) system in order to obtain acceptable flows. Since the valve' handlevers could be accidentally bumped, the modified rotational stops prevent opening of these valves beyond this throttled position.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because rotational stops do not affect the pressure boundary or functional requirements of these valves.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the operation of the Essential Service Water system is not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this modification minimizes the potential for the Essential Service Water system to operate different than required by system flow balancing tests.

MODIFICATION M6-2-87-102

DESCRIPTION

This modification installed auto make-up capability to the Component Cooling system surge tank. Air operated valves and the associated level control function were added to the primary and demineralized water systems surge tank make-up sources.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the function and operation of the Component Cooling system surge tank are not affected. Automatic maintenance of surge tank level decreases the probability of malfunction of equipment.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the function of the Component Cooling Water system is not affected. Level indication and monitoring of the surge tank level is not affected by failure of any equipment added by this modification. Manual control is still available.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the incorporation of automatic make-up to the Component Cooling Water surge tank increases the availability of sufficient cooling capacity and reliability of the Component Cooling Water system.

MODIFICATION M6-1-87-108

DESCRIPTION

This modification provided vented loop seals in the fill lines to the diesel generator fuel oil reservoirs and fuel oil headers and rerouted the reservoir vent and overflow lines for the Unit 1 diesel generator fuel oil system. Addition of the vented loop seals in the reservoir and fuel oil header fill lines ensures adequate fuel oil supplies to the reservoirs and diesel generators. Adequate reservoir and fuel oil header reserves ensures proper fuel oil supplies to the diesel generators which aids in minimizing diesel generator slow start problems. Rerouting the diesel generator reservoir vent and overflow lines to the present flame arrestor standpipe prevents possible siphoning of the fuel oil through the supply lines or through the reservoir overflow lines and ensures positive head on the fuel oil supply headers when the diesels are not running.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because there is no affect on the abilities of the diesel oil systems or the diesel generators to perform their safety functions as described in the FSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the added loop seals and anti-siphon vent lines will ensure that the diesel generators have adequate priming fuel oil supplies.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because ensuring adequate fuel oil supplies to the diesel generators decreases the potential for diesel generator starting problems and thus increases the margin of safety.

MODIFICATION M6-1-87-113

DESCRIPTION

This modification adds a high point vent to the Auxiliary Feedwater to Essential Service Water cross-tie line, 1AF03AA-6.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because this high point vent allows the Essential Service Water to Auxiliary Feedwater cross-tie line to be vented and ensures adequate pump suction conditions.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because a normally closed valve isolates the vent line.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the addition of a vent line does not affect the limiting conditions for operation or surveillance requirements of the Auxiliary Feedwater system.

MODIFICATION M6-2-87-126

DESCRIPTION

This modification replaced the welded closure plates on spare penetrations P-63, P-64 and P-74 with blind flanges. These can be removed during outages to allow access to the containment building for temporary cables and hoses.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the type of penetration added is the same as penetrations previously evaluated. These modified penetrations will be tested in accordance with 10CFR50, Appendix J.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the modified penetrations are the same design as containment penetrations that currently exist as described in UFSAR section 6.2.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the modified penetrations will receive periodic tests in accordance with 10CFR50, Appendix J as required in Technical Specification 3/4.6.1.2.

MODIFICATION M6-0-87-128

DESCRIPTION

This modification reduces the dissolved oxygen content of the primary water by installing a recirc pipe to allow the Primary Water Storage Tank to be recirculated through the Deaerator. A manual isolation valve is provided for manual control and a pressure reducing orifice ensures that the water is delivered to the deaerator at the correct pressure.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because it does not affect the design basis or failure events identified in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because this modification does not change the function of the Primary Water system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this modification will lower the primary water dissolved oxygen content and enhance the ability to comply with Technical Specification 3/4.4.7.

MODIFICATION M6-2-87-131

DESCRIPTION

This modification removed interlocks which connected the transformer water spray (fire protection) systems with the trip relays on the Main Power , Unit Auxiliary and System Auxiliary transformers. The spray header pressure switches were also disconnected from the deluge initiation circuits to remove the trip interlocks with the transformer coolers actuated by the deluge pressure switch signals.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because it will not alter the operation of the transformers or the deluge systems. The removal of the interlocks eliminates the potential for inadvertent trips of the transformers during deluge system testing.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the systems are still operated in accordance with their design bases. In the event of a fire, it is not necessary to remove power to the affected transformer prior to initiating the deluge system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the modification does not change the operation of any Technical Specification related system.

MODIFICATION M6-0-87-133 AND M6-1-87-134

DESCRIPTION

These modifications prevent the inadvertent start of the diesel driven Essential Service Water pumps and diesel driven Auxiliary Feedwater pump during maintenance and testing activities. The S5 switch on each diesel, is rewired so that the pump starting and fuel shut-off relays can not energize when the switch is placed in the OFF position. A direct negative ground connection is also provided for components on the control panel to prevent electrical noise.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because it does not change the safety function or design of this system. The modification prevents inadvertent starts of the diesel while testing is in progress and increases the accuracy of the tachometer readings by reducing electrical noise.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the system operation is enhanced by minimizing spurious starts during maintenance and testing.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because potential system damage is minimized by reducing the potential for inadvertent starts. Reducing electrical noise increases the accuracy of the tachometer circuit during system operation.

MODIFICATION M6-0-87-139

DESCRIPTION

This modification provided a remote effluent monitoring system to meet the requirements of the Illinois Safety Preparedness Act Number 83-1342. The Monitoring system is capable of continuously identifying and quantifying the radioactive contaminants of all effluents from the nuclear facilities.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the monitoring system does not perform a safety related function and does not effect any equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because this modification does not affect the operation of the plant.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-2-87-140

DESCRIPTION

This modification connects additional Post Accident Neutron Monitoring (PANM) system outputs to the process computer. This provides hard copy print out of these parameters as required by Byron Station's commitment to RG 1.97

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the computer inputs provide additional information to the plant operators. There are no changes to any system functional requirements.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the additional computer inputs do not affect any safety related systems or components needed for safe reactor shutdown.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the additional computer inputs are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-87-144

DESCRIPTION

This modification provides a line from the conductivity sump discharge line (OCP57A) to the release tank inlet header (OWX451A) to permit the condensate polishing conductivity sump pumps to direct flow to the release tanks. This allows contaminated wastewater to be redirected to the release tanks before discharge.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because it does not perform a safety related function and does not effect any equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the modification allows improved capability for discharging effluent through a monitored pathway.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-2-87-150

DESCRIPTION

This modification reconnects the signal converters for computer usage from the upper steam generator blowdown lines to the lower lines. Since blowdown of steam generators is accomplished with the lower lines, this modification eliminates the need to take readings from flow indicators.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the changed computer inputs do not perform a safety related function and do not affect any equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because there is no affect on the operation of the plant.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-2-87-153

DESCRIPTION

This modification replaced the woven jacket, collapsible fire hose with a hard rubber, non-collapsible, reel-mounted fire hose in an area with limited space for laying out hose.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because replacement of the fire hose does not alter the method or means of fire suppression and has no impact on previous evaluations. The replacement equipment facilitates the fire suppression effort under conditions of operation.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because no new fire hazards are created or introduced by this fire hose replacement.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the replacement hose provides a better suppression capability under conditions of operation and complies with all details of the equipment specification.

MODIFICATION M6-0-87-156

DESCRIPTION

This modification abandons 30 Auxiliary Building Accessible and Non-accessible Area Exhaust Filter isolation dampers in the failed open position. The associated Local Control panels for these dampers have been deleted and removed.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the safety function of these components is not changed. The dampers were required to open (if closed) during an event. The dampers are abandoned in the full open position.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the dampers are closed pneumatically and are designed to fail open. With all electrical and air connections to the dampers removed, a spring mechanism in the damper actuator prevents the dampers from closing.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the modification leaves the dampers in a failed open position allowing airflow through the filters at all times.

MODIFICATION M6-0-87-160

DESCRIPTION

This modification redirects sample panel (OPS01J) drains for steam generator blowdown samples from the Auxiliary Building equipment drain system to the chromated drain tank (OWE02MA). Piping was added from the chromated drain pump discharge to the Unit 1 steam generator blowdown condenser to permit sample return and reduce the input to the radwaste system.. The existing chromated drain tank lines were redirected to the Auxiliary Building floor drain system to prevent low quality water from entering the steam generator blowdown system. Level instruments were added for chromated drain pump (OWE04MA) control and level alarm.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because all changes are being made to non-safety related systems. Components in seismic areas are seismically supported.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because there is no interaction with any equipment or component important to safety.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components effected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-87-161

DESCRIPTION

This modification provided an isolation flange in line OVR08A-1 and an isolation flange and ball valve (OVR563) in line OVR08B-3/4 to ensure positive shut-off of demineralized water to prevent overflow of the caustic tank (OVR02T).

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the affected system is non-safety related and does not interact with equipment or components important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because there is no interaction with any safety related equipment. Failure of the equipment will not affect any safety related equipment or allow any uncontrolled releases to the environment.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-87-162

DESCRIPTION

This modification provides tubing from the steam generator blowdown demineralizer effluent process piping to the sample room which allows for continuous sampling of the demineralizer effluent.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because all affected systems and components are non-safety related with the exception of core holes through safety-related concrete which have been checked for effects of rebar cuts on the integrity of the floor slab. The tubing is seismically supported where necessary.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the modification will not affect safety related systems or components (except the core holes in safety related concrete as noted above) needed for safe reactor shutdown.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the core holes through safety related concrete have been verified for structural adequacy. There is no other interaction with equipment or components important to safety.

MODIFICATION M6-0-87-167 AND M6-2-87-032

DESCRIPTION

This modification added fire wrap material to an existing cable tray and fireproofing material to an existing beam (7AB-15). The modification is required to achieve a 3 hour fire rating for the beam.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because it adds passive fire resistant material and does not alter the method or means of operation of equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because no new hazards are created or introduced by addition of passive fire resistant material.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the material added complies with existing Administrative Technical Requirements.

MODIFICATION M6-1-87-171

DESCRIPTION

This modification relocated the hydrogen gas flow totalizer, 1FQI-HY020, used to monitor the hydrogen vent on the generator stator water cooling (GC) system reservoir tank. The new location is above the reservoir tank so that any accumulation of water during normal operation will drain back to the reservoir tank. Isolation valves for the totalizer have also been provided so that the totalizer can be isolated prior to shutting down the GC system.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the hydrogen totalizer provides indication of hydrogen inleakage into the generator stator water cooling system reservoir and is not required for the safe shutdown of the plant.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the modification will not affect safety related systems or components needed for safe reactor shutdown.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-87-178

DESCRIPTION

This modification extended the containment recirculation sump guard pipe vent lines outside of the recirculation sump debris screens. The existing vent valves are tack welded open. The extension improves accessibility to the vent valve for venting during leak rate testing of the penetrations.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the vent lines do not reduce the integrity of the penetration or change its safety function.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the modification extends existing vent piping using required design criteria.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications. The modification facilitates the performance of leak rate testing required by Technical Specification 3/4.6.1.2.

MODIFICATION M6-2-88-004

DESCRIPTION

This modification involved rewiring the reactor protection circuitry to change the reactor trip on turbine trip permissive from P7 to P8. Previously, a turbine trip caused the reactor to trip if reactor power was above 10% reactor power (P7). The modification results in a turbine trip causing a reactor trip only if reactor power is above 30% (P8). The modification also revises steam dump control actuation from turbine trip to reactor trip, so that on turbine trip below P8 the steam dumps are controlled by the load rejection controller. The modification eliminates reactor trips which occur between 10% and 30% power, which reduces the stress to the plant and protection systems.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because turbine trip initiation of reactor trip is not credited in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because safety systems remain unchanged.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because components or equipment are not changed that effect the Technical Specifications or bases.

MODIFICATION M6-0-88-012

DESCRIPTION

This modification replaced a common control switch for valves 0WX043A and 0WX043B with separate switches for each valve and revised wiring to permit having both valves open at the same time. The switches are located on the liquid radwaste panel 0PL01J. This modification allows greater flexibility in operating the radwaste processing system.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because simultaneous opening of these valves does not create any accidents or consequences that were not previously evaluated in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because no changes to the liquid radwaste inventory are created by this modification.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-88-015

DESCRIPTION

This modification replaced the existing instrument air dryer with new "Pall Amloc" DHA heat-less dryers. The new air dryers will use less air due to demand cycling. The service air compressor table was also modified to reduce vibration transmission from the running compressor to the standby compressor.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the FSAR is not increased by this modification because the function and operation of the instrument air system has not been changed.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR is not created because the operation of the instrument air system has not been changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-88-026

DESCRIPTION

This modification improves the ability to monitor reactor vessel and refueling cavity level during mid-loop operations. The following changes were made to instrument loops 1RY046, 1RY047 and 1RY048:

- addition of a third wide range transmitter, 1LT-RY048, to provide an overlap with the existing level transmitters.
- recalibration of the level instrument loops for 100 degree water.
- addition of computer points for each loop for trending purposes. The computer data is more accurate than the indicators due to the associated tolerances.
- addition of a high level alarm for the refueling cavity to prevent overfilling.
- revision of the main control board system graphics and the annunciator window from "RH Pump Suction Low" to "Reactor Vessel Level Low".

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because it prevents degradation of equipment important to safety (RHR pumps) by improving the reliability of existing instrumentation. The instrumentation is non-safety related and used only when the plant is shutdown and Reactor Coolant System level changes are required. The modification has no impact on the probability of an accident as defined in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the modification provides an improved means of verifying adequate NPSH for the RHR pumps to prevent pump cavitation and degradation.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because an improved means of verifying adequate NPSH for the RHR pumps enhances the ability to comply with Technical Specification 3/4.9.10 and 3/4.9.8 and increases the margin of safety.

MODIFICATION M6-1-88-028 AND M6-2-88-028

DESCRIPTION

This modification retaged Component Cooling system surge tank level transmitters, control valves and associated instrument lines, and rerouted cables to affected instruments to provide proper main control room indication.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because there are no changes to plant equipment or components.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because no changes were made to the operation or function of plant equipment.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-88-029 AND M6-2-88-029

DESCRIPTION

This modification provides the required Component Cooling (CC) pump trip on low CC surge tank level by realigning level switches 2LSL-CC072 and 73 to the appropriate division and train.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because operation of the CC system with crain separation, as described in the UFSAR, requires the level switches to function as modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the CC system function is not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the modification does not change the design basis of the CC system.

MODIFICATION M6-2-88-030

DESCRIPTION

This modification effects the fire detection system by removing several potential causes of spurious suppression system actuation.

- 1) One train of ionization detectors in each of the cable spreading rooms and the cable tunnel was replaced with a train of rate-compensated heat detectors.
- 2) Each train of rate-compensated heat detectors was cross connected with the opposite train of ionization detectors to provide automatic suppression system actuation.
- 3) A back-up power supply (battery) was added to the Fire Detection Panels.
- 4) A time-control relay was added to the detection panels to limit the duration of a power interruption during detection panel reset.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because the level of detection and suppression capability is maintained as originally designed while increasing the detection capabilities and decreasing the potential of spurious actuation.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the operability of the Fire Detection System is not effected.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the ability of the Fire Protection System to respond to a fire has not been reduced. Additional detection capability has been provided while minimizing spurious actuation and potential personnel safety hazards.

MODIFICATION M6-0-88-038

DESCRIPTION

This modification added a recirculation line with a sample tap to the Sedimentation Pond Sump Pump discharge for the Construction Runoff Pond. This allows samples to be taken before discharging the runoff pond to the Unit 2 Natural Draft Cooling Tower basin, which prevents an NPDES violation if the discharge limits are exceeded. Also a flow totalizer was added to measure the volume of each discharge. These changes ensure compliance with NPDES requirements.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because no components or equipment important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function plant systems have not been changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-2-88-040

DESCRIPTION

During initial startup testing and continuing through power operations, improper feedwater flow splits were observed between the main feedwater nozzle and auxiliary feedwater nozzle on the steam generators. Limitations on main nozzle flow have resulted in power restrictions during plant operation. Analysis and testing indicated that the likely cause of the feedwater flow split anomaly was erratic performance of the controlled closure check valves (1FW078A,B,C,D) in the feedwater bypass lines.

This modification replaced check valves 1FW078A, B, C, and D with piping spool pieces and eliminated the Low T AVERAGE interlock with reactor trip.

This modification provides both the reliability and simplicity of the original design intent of the controlled closure check valve while improving the feedwater flow split between the upper and lower steam generator nozzles. Elimination of the Low T AVERAGE interlock with reactor trip results in feedwater isolation with all reactor trips and allows the safety related functions of the controlled closure check valves (FW078A,B,C,D) to be assumed by the feedwater bypass isolation valves (1FW039A,B,C,D).

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because the ability of the Main Feedwater (FW) system to perform its design function as described in chapter 10.4.7 of the UFSAR is not impaired by deleting the controlled closure check valves from the FW bypass lines. Deleting the check valves will allow the FW bypass line to perform its design function of delivering a minimum of 10% of total FW flow to the upper nozzle of the steam generator.

The ability of the Auxiliary Feedwater (AF) system to perform its intended safety function as described in chapter 10.4.9 of the UFSAR is not impaired. Deletion of the Low T average interlock concurrent with reactor trip

from the FW isolation initiation is consistent with the design intent of protecting the Reactor Coolant (RC) system from an excessive cooldown following a reactor trip.

The risk of unacceptably high stresses in the FW bypass line due to water hammer following a feedline break upstream of the check valve is reduced since the closure time of the FW bypass isolation valve is slower than the closure time of the controlled closure check valve.

The steam generator preheaters are adequately protected against the introduction of cold auxiliary feedwater and potential bubble collapse water hammer.

No new scenarios result from this modification that would exceed the bounds of prior LOCA, non-LOCA, LOCA-related, or Feedwater System Pipe Break analyses. In all evaluations, the effects did not result in exceeding any design or regulatory limit pertaining to the UFSAR analyses.

The equipment required to isolate a main steam line break outside of containment was evaluated. This modification does not decrease the capability of the required equipment to mitigate the consequences of a main steam line break outside of containment due to environmental effects.

2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the FW and AF systems will still perform their respective intended safety functions as described in UFSAR chapter 10.4.7 and 10.4.9. The use of the main FW isolation valves (1FW009A,B,C,D) and FW bypass line isolation valves (1FW039A,B,C,D) will prevent backflow of auxiliary feedwater to the steam generator preheater section.

The effects of auto-start of the 1A/2A AF pump due to undervoltage on bus 141/241 were evaluated for conditions associated with reactor start-up and operation. No conditions were found that resulted in unacceptable flow to the steam generator preheater section or unanalyzed AF flowpaths as a result of this modification. The performance of the AF system is not impaired and the formation of bubble collapse water hammer in the steam generator preheater section is precluded.

Feedwater isolation is currently actuated following most reactor trips, therefore the duty on all valves that receive a feedwater isolation signal will not be significantly increased due to the elimination of the LOW T AVERAGE interlock.

Sufficient redundancy exists in the instrumentation and controls associated with FW isolation such that a single active failure will not result in an unanalyzed accident. Since both the main FW isolation valves (1FW009A,B,C,D) and the FW bypass isolation valves will be used to isolate the AF flow to the steam generator preheater section, a single failure of either valve to close will not result in an unanalyzed AF flowpath.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the AF system will still be capable of removing decay heat and reducing the RC system temperature to less than 350 deg. F from normal operating conditions (basis for Tech Spec 3/4.7.1.2). The FW isolation valves will continue to function as designed to meet the intent of the basis for Tech Spec 3/4.6.3. The Reactor Trip system and Engineered Safety Features Actuation System Instrumentation will continue to function as designed to meet the intent of the bases for Tech Spec's 3/4.3.1 and 3/4.3.2. A revision to these bases has been submitted to clarify the newly defined function of P-4 on page B3/4.3-3. In accordance with 10CFR50.36, the bases are not considered part of the Technical Specifications. Therefore, NRC acceptance of this revision was not required prior to implementation of this modification.

The margin of safety as defined in the bases for Technical Specifications 3/4.7.1.2, 3/4.6.3, 3/4.3.1 and 3/4.3.2 is not reduced by this modification.

MODIFICATION M6-1-88-041

DESCRIPTION

This modification added steel draft curtains in the Auxiliary Building stairway.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because it does not impact any equipment or components important to safety or change the design criteria of any safety related structures or components.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because this modification is passive in nature and has no affect that will introduce or create new hazards not previously evaluated.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-88-043 AND M6-0-88-044

DESCRIPTION

This modification installed two flow totalizers in the Makeup Demineralizer high conductivity sump discharge; one upstream and one downstream of the Condensate Cleanup sump discharge line. This allows measuring all the Makeup Demineralizer regenerant wastewater for compliance with the NPDES permit.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because no components or equipment important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the affected systems has not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-2-88-110

DESCRIPTION

This modification relocated line 2WX59A-2 upstream of isolation valve 2WX244. This allows for isolation of primary water to the resin fill plate and prevents contamination to the Auxiliary Building during resin sluicing from the Letdown Cation Demineralizer to the Spent Resin Storage Tank.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because the relocation of this line will not change the function of the radwaste system. Design and installation of the modification is in accordance with applicable codes and standards.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because operation of the system with this modification does not affect any components important to safety or impact UFSAR section 15.7.2. Appropriate CVCS valves are verified closed during resin sluicing operations.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the basis for Technical Specification 3/4.11 is not affected by this modification since the radwaste system will continue to provide a non-safety related path for sluicing operation without affecting any safety related equipment or safe shutdown features.

MODIFICATION M6-1-88-112

DESCRIPTION

This modification revised the cam and limit switch position for valve 1FP2242, an upstream isolation valve on a safety related charcoal filter deluge system, so that the valve produces a "Trouble" alarm when the valve is in the intermediate or open position.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because historical data indicated that single valve isolation has resulted in damage to safety related charcoal filters due to water leakage. Closing and supervising the upstream isolation valve will help insure the isolation capability previously evaluated.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because no new hazards are created or introduced by this modification.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because neither method nor means of operation was affected by this modification. The "Trouble" alarm still occurs when the valve is outside its normal position.

MODIFICATION M6-1-88-115 AND M6-2-88-115

DESCRIPTION

This modification provides permanent electrical power connections to the Circulation Water Acid systems.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because no components or equipment important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the no operation or function of equipment or components important to safety have been changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-88-120

DESCRIPTION

This modification replaces the Service Air Compressor Oil Cooler with a larger unit capable of providing greater surface area for heat transfer between the oil and cooling water.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because the increased size of the oil cooler, which allows the Service Air Compressor to operate at a lower temperature, will continue to ensure system operation is within the appropriate operational requirements and design criteria.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the Service Air system has not changed and system operational limitations and conditions have not been modified.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-89-010

DESCRIPTION

This modification routes the Makeup Demineralizer room high and low conductivity headers to a trench with isolation valves on each header. This allows regenerant waste to go through the Makeup Demineralizer room sump instead of directly to the flume.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because no components or equipment important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of equipment or components important to safety has not been changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-89-015

DESCRIPTION

This modification added a handwheel to the operator of valves OWW019A and OWW019B. The handwheels ensure the capability to manually open the valves following a postulated seismic accident.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because the installation of the handwheels does not alter the safety function or design of this system.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the failure modes remain unchanged as indicated in UFSAR section 9.2. Addition of the handwheels will improve the Well Water system availability by allowing for manual valve operation in case of loss of air or power.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because system function is not changed as described in Technical Specification section 3/4.7.5. By increasing the availability of the Well Water system, the margin of safety is increased.

MODIFICATION M6-0-89-020

DESCRIPTION

This modification installed additional warning horns in the plant areas protected by CO2 and Halon suppression systems. Horn placement was such that horns can be heard outside doors leading to these areas.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because it enhances the warning system to protect personnel in areas protected by the gaseous suppression systems and has no affects on equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because no new hazards are created or introduced by the additional horns.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the equipment affected is not associated with any Technical Specifications or Administrative Technical Requirements.

MODIFICATION M6-0-89-034

DESCRIPTION

This modification removes the four dry cleaning units, two wet washers, two dryers, and associated supporting system connections currently used in the laundry room and replaces them with three wet washers, five dryers, and associated supporting system connections. The new laundry facilities enable the liquid laundry wastes to be processed by existing plant radwaste systems instead of the current requirements for personnel to barrel and store freon-based dry cleaner and hazardous mixed wastes on-site.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because the existing laundry facilities have been replaced with a non-safety facility that does not change the description of the laundry operation as described in UFSAR Table 3.2-1.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because structural change to the Auxiliary Building have been reviewed and qualified in accordance with applicable codes and standards.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this modification does not alter the functions of the associated non-safety related liquid radwaste processing systems as identified in Technical Specification section 3/4.11.1.1, 3/4.11.1.3, and Table 4.11-1.

MODIFICATION M6-0-89-603, M6-1-89-603 AND M6-2-89-603

DESCRIPTION

This modification replaced the Service Air moisture separators due to corrosion of the existing moisture separators. Drain piping has also been rerouted to eliminate water entrapments.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because no components or equipment important to safety have been modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the Service Air system has not been changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-0-89-634, M6-1-89-634 AND M6-2-89-634

DESCRIPTION

This modification replaces existing prefilter and after-filter housings on the Instrument Air dryers with improved housings since the original filters were no longer available.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because the capacity and function of the filters has not changed.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the Instrument Air system has not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-89-644 AND M6-2-89-644

DESCRIPTION

This modification removes the Main Feedwater pump suction cavity drain piping and plugs the drain holes with carbon steel plugs to reduce pump leakage. The drains are not required for operation and were used only for extended layup. The bottom drain lines remain in service.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because no components or equipment important to safety have been changed.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the Main Feedwater system has not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.

MODIFICATION M6-1-89-645 AND M6-2-89-645

DESCRIPTION

This modification replaces a "T" intersection with a "Y" intersection in the High Pressure Turbine Gland Steam Supply/Leakoff piping. This was done to reduce backpressure in the intersection that resulted in excessive leakoff, high moisture content in the turbine oil and an abnormally high generator gas dewpoint.

SAFETY EVALUATION SUMMARY

1. The probability of an occurrence or the consequence of an accident, or malfunction of equipment important to safety as previously evaluated in the UFSAR is not increased by this modification because no component or equipment important to safety was modified.
2. The possibility for an accident or malfunction of a different type than any previously evaluated in the UFSAR is not created because the function of the Gland Steam Supply/Leakoff system has not changed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the modification does not affect the turbine overspeed protection system and systems or components affected by this modification are not included in the discussion of the basis for any safety limits as described in the Technical Specifications.